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NEWS EXPRESS JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005

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FILE 'HOME' ENTERED AT 18:06:58 ON 19 OCT 2005

=> file ca, biosis,medline

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FILE 'BIOSIS' ENTERED AT 18:07:11 ON 19 OCT 2005

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=> s hops

L1 5682 HOPS

=> s antioxidant? or vitamin? r mineral?

L2 238372 ANTIOXIDANT? OR VITAMIN? R MINERAL?

=> s antioxidant? or vitamin? or mineral?

L3 1373609 ANTIOXIDANT? OR VITAMIN? OR MINERAL?

=> s l1 (p) l3

L4 135 L1 (P) L3

=> s protein? or fat? or carbohydrate? or glucosamine? or chondroitin sulfate? or (amino sugar?)

L5 7194336 PROTEIN? OR FAT? OR CARBOHYDRATE? OR GLUCOSAMINE? OR CHONDROITIN  
SULFATE? OR (AMINO SUGAR?)

=> s l5 and l4

L6 43 L5 AND L4

=> s l5 (p) l4

L7 39 L5 (P) L4

=> dup rem l7

PROCESSING COMPLETED FOR L7

L8 26 DUP REM L7 (13 DUPLICATES REMOVED)

=> d 1-26 ab,bib

L8 ANSWER 1 OF 26 CA COPYRIGHT 2005 ACS on STN DUPLICATE 1

AB The female parts of **hops** (*Humulus lupulus* L.) show estrogenic effects as well as cancer chemopreventive potential. We analyzed the chemopreventive mechanism of **hops** by studying its antioxidative activities and its effect on the detoxification of a potentially toxic quinone (menadione). The detoxification enzyme quinone reductase [(NAD(P)H):quinone oxidoreductase, QR] protects against quinone-induced toxicity and has been used as a marker in cancer chemoprevention studies. Although the hop extract was only a weak quencher of free radicals formed from 1,1-diphenyl-2-picrylhydrazyl, it demonstrated strong QR induction in Hepa 1c1c7 cells. In addition, compds. isolated from **hops** including xanthohumol (XH) and 8-prenyl-naringenin were tested for QR induction. Among these, XH was the most effective at inducing QR with a concentration required to double the specific activity of QR (CD value) of  $1.7 \pm 0.7 \mu\text{M}$ . In addition, pretreatment of Hepa1c1c7 cells with XH significantly inhibited menadione-induced DNA single-strand breaks. The QR inhibitor dicumarol reversed the protective effect of XH against menadione-induced DNA damage. Because the expression of QR and other detoxifying enzymes is known to be upregulated by binding of the transcription factor Nrf2 to the **antioxidant** response element (ARE), the reporter activity mediated by ARE in HepG2-ARE-C8 cells was investigated after incubation with XH for 24 h. Under these conditions, XH increased ARE reporter activity in a dose-dependent manner. One mechanism by which XH might induce QR could be through interaction with Keap1, which sequesters Nrf2 in the cytoplasm, so that it cannot activate the ARE. Using LC-MS-MS, we demonstrated that XH alkylates human Keap1 **protein**, most likely on a subset of the 27 cysteines of Keap1. This suggests that XH induces QR by covalently modifying the Keap1 **protein**. Therefore, XH and **hops** dietary supplements might function as chemopreventive agents, through induction of detoxification enzymes such as QR.

AN 143:259686 CA

TI Xanthohumol Isolated from *Humulus lupulus* Inhibits Menadione-Induced DNA Damage through Induction of Quinone Reductase

AU Dietz, Birgit M.; Kang, Young-Hwa; Liu, Guowen; Eggler, Aimee L.; Yao, Ping; Chadwick, Lucas R.; Pauli, Guido F.; Farnsworth, Norman R.; Mesecar, Andrew D.; Van Breemen, Richard B.; Bolton, Judy L.

CS College of Pharmacy, Department of Medicinal Chemistry and Pharmacognosy  
and UIC/NIH Center for Botanical Dietary Supplements Research, University  
of Illinois at Chicago, Chicago, IL, 60612-7231, USA  
SO Chemical Research in Toxicology (2005), 18(8), 1296-1305  
CODEN: CRTOEC; ISSN: 0893-228X  
PB American Chemical Society  
DT Journal  
LA English  
RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 26 CA COPYRIGHT 2005 ACS on STN DUPLICATE 2  
AB Hypophosphatasia (**HOPS**) is a clin. heterogeneous heritable  
disorder characterized by defective skeletal **mineralization**,  
deficiency of tissue-nonspecific alkaline phosphatase (TNSALP) activity, and  
premature loss of deciduous teeth. To date, various mutations in the  
TNSALP gene have been identified. Especially, A115V located in exon 5 has been  
detected in a Japanese patient with severe periodontitis and adult-type  
**HOPS**. In this study, the authors have characterized the  
**protein** translated from the mutant A115V gene. Wild-type and  
A115V mutant-type TNSALP cDNA expression vector pcDNA3 have been  
constructed and transfected to COS-1 cells by lipofectin technique. After  
48-h transfection, the cells were subjected to assay ALP activity. To  
identify possible dominant effect of the mutation, the authors performed  
co-transfections of wild-type and mutated cDNA, and evaluated the residual  
activities of each mutation. Detection of TNSALP synthesized by COS-1  
cells transfected with the wild- or the mutated-type was also performed by  
using an immunofluorescent method. ALP activity of cell transfected with  
the mutant cDNA (A115V) plasmid after 48-h transfection exhibited 0.399  
U/mg. As the enzymic activity of the wild type was taken as 100%, the  
value of the mutant was estimated as 16.9%. When co-transfected this mutant  
showed no inhibition of the wild-type enzyme. TNSALP in COS-1 cells  
transfected with the mutant exhibited as strong fluorescence at the  
surface of cells as wild-type. This study indicated that the mutant  
(A115V) TNSALP gene produced the defective ALP enzyme and it could be  
recessively transmitted and be a disease-causing mutation of the  
adult-type hypophosphatasia.

AN 142:111812 CA  
TI Characterization of the mutant (A115V) tissue-nonspecific alkaline  
phosphatase gene from adult-type hypophosphatasia  
AU Watanabe, Hisashi; Takinami, Hiroyuki; Goseki-Sone, Masae; Orimo, Hideo;  
Hamatani, Ryoko; Ishikawa, Isao  
CS Department of Hard Tissue Engineering (Periodontology), Graduate School,  
Tokyo Medical and Dental University, Tokyo, Japan  
SO Biochemical and Biophysical Research Communications (2005), 327(1),  
124-129  
CODEN: BBRCA9; ISSN: 0006-291X  
PB Elsevier  
DT Journal  
LA English  
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 26 CA COPYRIGHT 2005 ACS on STN  
AB The long-term flavor stability of packaged beer has always been of great  
interest to the brewing industry. As part of this investigation into  
identifying factors that influence the flavor shelf life of packaged beer,  
the impact of radical formation and anti-oxidant potential of different  
beer products were measured via various instrumental and anal. procedures.  
These included ESR (ESR) instrumentation, hydrogen peroxide and other  
**antioxidant** anal. assays. The ESR instrument is able to measure  
the radical levels (PBN) and the antiradical potential (DPPH) within a  
beer product. Brewing conditions were also examined to identify processes  
that optimized the flavor stability of the beer. These included the use  
of kettle **hops** as well as sulfur dioxide and thiol  
**proteins** formed during the fermentation process. It was shown that by  
controlling the brewing process via wort oxygenation, yeast handling and  
final product management, the level of radical formation as well as the

antioxidant potential of the beer could be altered to maximize the long-term flavor stability of the beer. This will consequently impact on the shelf life of the product within the market place.

AN 142:354279 CA  
TI Processes to monitor and improve the long term flavour stability of beers  
AU Lentini, Aldo; Rogers, Peter; Goldsmith, Mark; Oliver, Tony; Speers, Alex;  
Swan, Tracey; Baldwin, Ben; Tonissen, Kathryn  
CS Carlton and United Breweries Ltd, Australia  
SO Proceedings of the Convention of the Institute & Guild of Brewing, Asia  
Pacific Section (2004), 28th, 82-89  
CODEN: IBAZA2; ISSN: 0367-6897  
PB Institute & Guild of Brewing, Asia Pacific Section  
DT Journal; (computer optical disk)  
LA English  
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 26 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN  
DUPLICATE 3

AB Hypophosphatasia (**HOPS**) is a heritable disorder characterized by defective skeletal **mineralization**, deficiency of tissue-nonspecific alkaline phosphatase (TNSALP) activity and premature loss of deciduous teeth. In a previous study, we detected missense mutations in the TNSALP gene of a patient who inherited the F310L and the V365I mutation with severe periodontitis and childhood **HOPS**. Expression of the mutant V365I TNSALP gene using COS-1 cells demonstrated that the **protein** translated from the mutant had undetectable ALP activity. In the present study, we characterized another ALP enzyme translated from the mutant F310L and compared it with the ALP in the patient's serum. The COS-1 cells transfected with the F310L and co-transfected with F310L and V365I (F310L/V365I) exhibited levels of 67% and 31%, respectively, with the enzymatic activity of the wild-type taken as 100%. In the thermostability test, TNSALPs in the COS-1 cells transfected with the mutant F310L or F310L/V365I were significantly more heat labile compared with that of the wild-type. Moreover, ALP from the patient's serum was also more heat labile than normal ALP. These results suggest that the **protein** translated from the mutant F310L, in addition to the mutant V365I, may be responsible for the expression of symptoms of the childhood-type **HOPS**.

AN 2004:335797 BIOSIS  
DN PREV200400331951  
TI The mutant (F310L and V365I) tissue-nonspecific alkaline phosphatase gene from hypophosphatasia.  
AU Takinami, Hiroyuki [Reprint Author]; Goseki-Sone, Masae; Watanabe, Hisashi; Orimo, Hideo; Hamatani, Ryoko; Fukushima-Irie, Mariko; Ishikawa, Isao  
CS Grad SchDept Hard Tissue Engn PeriodontolBunkyo Ku, Tokyo Med and Dent Univ, 1-5-45 Yushima, Tokyo, 1138549, Japan  
takinami.peri@tmd.ac.jp  
SO Journal of Medical and Dental Sciences, (March 2004) Vol. 51, No. 1, pp. 67-74. print.  
ISSN: 1342-8810.  
DT Article  
LA English  
ED Entered STN: 4 Aug 2004  
Last Updated on STN: 4 Aug 2004

L8 ANSWER 5 OF 26 CA COPYRIGHT 2005 ACS on STN DUPLICATE 4  
AB Hypophosphatasia (**HOPS**) is a clin. heterogeneous heritable disorder characterized by defective skeletal **mineralization**, deficiency of tissue-nonspecific alkaline phosphatase (TNSALP) activity, and premature loss of deciduous teeth. The gene for TNSALP is located on chromosome 1p34-36.1 and consists of 12 exons and 11 introns. In our previous study, we found the novel point mutations (G1144A and T979C) from the genomic TNSALP gene of a patient with childhood **HOPS**. In this study, the authors have characterized the **protein** translated from the mutant G1144A gene. Wild-type and G1144A mutant-type TNSALP cDNA expression vector pcDNA3 were constructed and transfected to

COS-1 cells by lipofectin technique. After 48-h or 72-h transfection, cells were collected and homogenized using polytron homogenizer. After centrifugation at 10,000g for 10 min, the supernatant was assayed. ALP activity was determined with 10 mM of p-nitrophenylphosphate as a substrate in 100 mM of 2-amino-2-methyl-1,3-propanediol-HCl buffer containing 5 mM of MgCl<sub>2</sub>. ALP activity of cells transfected with the mutant cDNA (G1144A) plasmid after 48-h or 72-h transfection exhibited  $0.063 \pm 0.012$  U/mg and  $0.054 \pm 0.012$  U/mg, resp. As the enzymic activity of the wild type was taken as 100%, the value of the mutant was estimated as 2.7% and 1.7%, resp. These values were not significantly different from those found with mock-transfected cells, i.e., 2.5% and 1.5%, resp. This study indicated that the mutation (G1144A) produced the inactive ALP enzyme and would be a disease-causing mutation of the childhood-type HOPS.

AN

138:168095 CA

TI

Function of mutant (G1144A) tissue-nonspecific ALP gene from hypophosphatasia

AU

Watanabe, Hisashi; Goseki-Sone, Masae; Grimo, Hideo; Hamatani, Ryoko; Takinami, Hiroyuki; Ishikawa, Isao

CS

Division of Periodontology, Department of Hard Tissue Engineering, Graduate School, Tokyo Medical and Dental University, Tokyo, Japan

SO

Journal of Bone and Mineral Research (2002), 17(11), 1945-1948

CODEN: JBMREJ; ISSN: 0884-0431

PB

American Society for Bone and Mineral Research

DT

Journal

LA

English

RE.CNT 26

THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8

ANSWER 6 OF 26 CA COPYRIGHT 2005 ACS on STN DUPLICATE 5

AB

14C-isoproturon residues were incorporated in wheat plants by growing seedlings for 18 days in quartz sand with nutrient solution which was treated with ring-labeled 14C-isoproturon, resulting in 14C-concentration equivalent to 15.4 nmol isoproturon per g dry shoot mass. The residues were characterized by extraction and HPLC-anal., and were shown to consist of unchanged isoproturon, soluble metabolites (monodemethylisoproturon, didemethylisoproturon, 1-hydroxyisoproturon, 2-hydroxyisoproturon, 2-hydroxymonodemethylisoproturon, 2-hydroxydidemethylisoproturon, isopropenylisoproturon and unidentified metabolites), as well as nonextractable residues. Dried plant samples containing these residues were mixed with soil samples originating from different farming systems, and **mineralization** to 14CO<sub>2</sub> was determined in a closed aerated laboratory system. In addition, the microbial biomass and bioactivity of soils were estimated by determination of substrate-induced heat output, basal heat output, metabolic heat quotient, total adenylate content and adenylate energy charge. Significant pos. correlations between 14CO<sub>2</sub> production or adenylate content and microbial biomass were observed in three soils; 14CO<sub>2</sub> production and total microbial biomass were highest in soil samples from organic farming. Soil samples from a former **hops** plantation contaminated with copper from previous fungicide applications did not fit this correlation, but exhibited a higher **mineralization** capacity per unit of microbial biomass. Soil microbial parameters are often insufficient to describe the influence of biotic factors on the **fate** of pesticides in soil.

AN

136:274726 CA

TI

Mineralization of plant-incorporated residues of 14C-isoproturon in arable soils originating from different farming systems

AU

von Wiren-Lehr, S.; Scheunert, I.; Dorfler, U.

CS

Institute of Soil Ecology, GSF-National Research Center for Environment and Health, Neuherberg, D-85764, Germany

SO

Geoderma (2002), 105(3-4), 351-366

CODEN: GEDMAB; ISSN: 0016-7061

PB

Elsevier Science B.V.

DT

Journal

LA

English

RE.CNT 22

THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8

ANSWER 7 OF 26 CA COPYRIGHT 2005 ACS on STN

AB

Food preserving agents which contain highly safe antibacterial substances

and thus can improve the preserving qualities of foods without exerting any undesirable effects on the taste or flavor of the foods. 1,5-D-anhydrofructose is used together with one or more antibacterial substances usable as food additives selected from among amino acids (glycine, alanine, etc.), glycerol lower **fatty** acid esters, sugar esters, **vitamin B1** salts, polyphosphates, ethanol, basic **proteins/peptides** (protamine, etc.), an antibacterial substance originating in licorice root extract, Capsicum annuum extract, **hops** extract, yucca extract, Phyllostachys pubescens extract, grapefruit seed extract, horse radish or mustard extract, organic acids (acetic acid, etc.) and salts thereof, chitosan, bacterial DNA, etc.

AN 135:136691 CA  
 TI Process for producing foods having good preserving qualities and food preserving agents  
 IN Yajima, Mizuo; Nozaki, Kazuhiko; Muroya, Kenkou; Yoshinaga, Kazuhiro; Fujisue, Mami  
 PA Asama Chemical Co., Ltd., Japan; Nihon Starch Co., Ltd.  
 SO PCT Int. Appl., 55 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001056408	A1	20010809	WO 2001-JP613	20010130
	W: AU, BB, BG, BR, CA, CN, CZ, EE, GE, HU, ID, IN, IS, JP, KR, LK, LR, LT, LV, MG, MN, MX, NO, NZ, PL, RO, SG, SI, SK, TT, UA, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 2001028860	A5	20010814	AU 2001-28860	20010130
	EP 1252827	A1	20021030	EP 2001-948910	20010130
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, CY, TR				
	US 2003152676	A1	20030814	US 2002-182668	20020731
	US 6824801	B2	20041130		
PRAI	JP 2000-21259	A	20000131		
	JP 2000-21260	A	20000131		
	JP 2000-21261	A	20000131		
	JP 2000-21262	A	20000131		
	WO 2001-JP613	W	20010130		

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 26 MEDLINE on STN  
 AB OBJECTIVE: Hypophosphatasia (**HOPS**) is an inheritable disorder characterized by defective skeletal **mineralization**, deficiency of tissue-non-specific alkaline phosphatase (TNSALP) activity and premature loss of deciduous teeth. The gene for TNSALP is located on chromosome 1p34-36.1 and consists of 12 exons and 11 introns. In this study we analysed the genomic TNSALP gene from a patient with **HOPS**, her family, and unrelated normal controls. MATERIALS AND METHODS: The proband was a 52-year-old Japanese woman with adult onset **HOPS**. The patient showed deficiency in alkaline phosphatase (ALP) activity, increased urinary excretion of phosphoethanolamine and severe periodontal disease. Genomic DNA was extracted from the peripheral leukocytes of the subjects. Based on published sequence data in the TNSALP gene, 11 pairs of polymerase chain reaction (PCR) primers were used to amplify the coding exons. The PCR amplified samples were subjected to PCR-single strand conformation polymorphism (SSCP) analysis and PCR-allele specific oligonucleotide (ASO) analysis. RESULTS: By PCR-SSCP analysis of the patient's genomic DNA, fragments containing exon 5 revealed abnormal mobility. This abnormal mobility (exon 5) was also found in the genomic DNA in her mother's sister, but were not detected in her **father**, brothers or sisters, and unrelated normal controls. Sequencing analysis of the abnormal band extracted from the SSCP gel revealed a C to T transition at nucleotide position 571 (C571T) in exon 5. This mutation

resulted in a substitution of Ala-115 with a Val in the mature TNSALP polypeptide. PCR-ASO analysis also confirmed this missense point mutation. The result of this study showed that the pro-band has inherited the C571T mutation in exon 5 from her mother alone and the disease in this family was inherited as an autosomal dominant trait from the pedigree. CONCLUSIONS: The C571T mutation is a new missense point mutation and appears to cause significant changes in the structure and function of TNSALP because Ala-115 is highly conserved in rat TNSALP and human tissue-non-specific, intestinal and placental ALPs.

AN 2002102645 MEDLINE  
DN PubMed ID: 11834095  
TI A novel point mutation (C571T) in the tissue-non-specific alkaline phosphatase gene in a case of adult-type hypophosphatasia.  
AU Watanabe H; Hashimoto-Uoshima M; Goseki-Sone M; Orimo H; Ishikawa I  
CS Department of Hard Tissue Engineering (Periodontology), Graduate School, Tokyo Medical and Dental University, Yushima, Japan..  
watanabe.peri@tmd.ac.jp  
SO Oral diseases, (2001 Nov) 7 (6) 331-5.  
Journal code: 9508565. ISSN: 1354-523X.  
CY Denmark  
DT (CASE REPORTS)  
Journal; Article; (JOURNAL ARTICLE)  
LA English  
FS Dental Journals  
EM 200205  
ED Entered STN: 20020209  
Last Updated on STN: 20020510  
Entered Medline: 20020509

L8 ANSWER 9 OF 26 CA COPYRIGHT 2005 ACS on STN DUPLICATE 6  
AB Prenylated flavonoids found in **hops** and beer, i.e., prenylchalcones and prenylflavanones, were examined for their ability to inhibit in vitro oxidation of human low-d. lipoprotein (LDL). The oxidation of LDL was assessed by the formation of conjugated dienes and thiobarbituric acid-reactive substances (TBARS) and the loss of tryptophan fluorescence. At 5 and 25  $\mu$ M, all of the prenylchalcones tested inhibited the oxidation of LDL (50  $\mu$ g **protein/mL**) induced by 2  $\mu$ M copper sulfate. The prenylflavanones showed less **antioxidant** activity than the prenylchalcones, both at 5 and 25  $\mu$ M. At 25  $\mu$ M, the nonprenylated chalcone, chalconaringenin (CN), and the nonprenylated flavanone, naringenin (NG), exerted prooxidant effects on LDL oxidation, based on TBARS formation. Xanthohumol (XN), the major prenylchalcone in **hops** and beer, showed high **antioxidant** activity in inhibiting LDL oxidation, higher than  $\alpha$ -tocopherol and the isoflavone genistein but lower than the flavonol quercetin. When combined, XN and  $\alpha$ -tocopherol completely inhibited copper-mediated LDL oxidation. These findings suggest that prenylchalcones and prenylflavanones found in **hops** and beer protect human LDL from oxidation and that prenylation antagonizes the prooxidant effects of the chalcone, CN, and the flavanone, NG.

AN 133:207012 CA  
TI Antioxidant and Prooxidant Actions of Prenylated and Nonprenylated Chalcones and Flavanones in Vitro  
AU Miranda, Cristobal L.; Stevens, Jan F.; Ivanov, Vadim; McCall, Mark; Frei, Balz; Deinzer, Max L.; Buhler, Donald R.  
CS Department of Environmental and Molecular Toxicology Department of Chemistry Linus Pauling Institute and Department of Biochemistry and Biophysics, Oregon State University, Corvallis, OR, 97331, USA  
SO Journal of Agricultural and Food Chemistry (2000), 48(9), 3876-3884  
CODEN: JAFCAU; ISSN: 0021-8561  
PB American Chemical Society  
DT Journal  
LA English  
RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 10 OF 26 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN DUPLICATE 7

AB Physicians should be aware of the growing evidence supporting the nutritional and health benefits of moderate consumption of alcohol as part of a healthy lifestyle. The recently approved voluntary label on wine ("the proud people who made this wine encourage you to consult your family doctor about the health effects of wine consumption") implies that physicians should promote wine as the preferred source of dietary alcohol. However, studies evaluating the relative benefits of wine versus beer versus spirits suggest that moderate consumption of any alcoholic beverage is associated with lower rates of cardiovascular disease. From a nutritional standpoint, beer contains more **protein** and B **vitamins** than wine. The **antioxidant** content of beer is equivalent to that of wine, but the specific **antioxidants** are different because the barley and **hops** used in the production of beer contain flavonoids different from those in the grapes used in the production of wine. The benefits of moderate alcohol consumption have not been generally endorsed by physicians for fear that heavy consumers may consider any message as a permissive license to drink in excess. Discussions with patients regarding alcohol consumption should be made in the context of a general medical examination. There is no evidence to support endorsement of one type of alcoholic beverage over another. The physician should define moderate drinking (1 drink per day for women and 2 drinks per day for men) for the patient and should review consumption patterns associated with high risk.

AN 2003:30411 BIOSIS  
DN PREV200300030411  
TI Nutritional and health benefits of beer.  
AU Denke, Margo A. [Reprint Author]  
CS 5323 Harry Hines Boulevard, Y3-234, Dallas, TX, 75390-9052, USA  
mdenke@ednet.swmed.edu  
SO American Journal of the Medical Sciences, (November 2000) Vol. 320, No. 5,  
pp. 320-326. print.  
ISSN: 0002-9629 (ISSN print).  
DT Article  
LA English  
ED Entered STN: 8 Jan 2003  
Last Updated on STN: 8 Jan 2003

L8 ANSWER 11 OF 26 CA COPYRIGHT 2005 ACS on STN  
AB The milk-beer type beverages can be prepared by fermentation proteolysis with enzymic prepsns. (3000 U/g dry matter) from *Penicillium roqueforti* added at .apprx.1 mg% for 30 h at .apprx.35°C. Before fermentation hydrolysis the milk is mixed with 0.2% **hops** and pasteurized at 63-65°C for 30 min. After the fermentation hydrolysis the milk is again pasteurized and mixed with sucrose to the final concentration of 9% and with **mineral** salts (ammonium and potassium phosphates) to 0.75%. The milk is finally fermented with *Saccharomyces cerevisiae* yeasts for 24 h, yeast mass is then separated by centrifugation, and the beverage is bottled. The final yeast fermentation step can be substituted by direct addition of 20% aqueous ethanol (as vermouth or rum) to reach the final ethanol concentration of 1-1.5%. The degree of **protein** hydrolysis in the final beverage is 6% of the original **protein** content and acidity is 10°SH.

AN 133:58008 CA  
TI Method of obtaining peptonized milk beverages of milk-beer type  
IN Szoltysek, Katarzyna  
PA Akademia Ekonomiczna im. Oskara Langego, Wroclaw, Poland, Pol.  
SO Pol., 4 pp.  
CODEN: POXXA7  
DT Patent  
LA Polish  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 176037	B1	19990331	PL 1994-306235	19941209
PRAI	PL 1994-306235		19941209		

L8 ANSWER 12 OF 26 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on  
STN DUPLICATE 8  
AB Hypophosphatasia (**HOPS**) is an inherited disorder characterized



by the defect of skeletal **mineralization** due to tissue-nonspecific alkaline phosphatase (TNSALP) deficiency. In this study we analyzed the TNSALP gene from a Japanese patient with **HOPS**, his parents, his brother, and unrelated normal controls. The proband is a 25-year-old Japanese male diagnosed with childhood hypophosphatasia. The patient reported premature exfoliation of the deciduous teeth and severe periodontal destruction of the permanent dentition. Genomic DNA was extracted from peripheral leukocytes of subjects. Eleven pairs of the polymerase chain reaction (PCR) primers were used to amplify the coding exons according to the published sequence data of the TNSALP gene. The PCR amplified samples were subjected to PCR-single strand conformation polymorphism (SSCP) analysis and PCR-allele specific oligonucleotide (ASO) analysis. In PCR-SSCP analysis of the patient's genomic DNA, the fragments containing exons 9 and 10 revealed abnormal mobilities. These abnormal mobilities (exons 9 and 10) were also found from his mother and **father's** genomic DNA, respectively. The sequencing analysis of the abnormal bands extracted from the SSCP gel showed a T to C transition at nucleotide position 1155 (T1155C) in exon 9 and G1320A in exon 10. PCR-ASO analysis confirmed these missense point mutations. PCR-ASO analysis also confirmed that mutation-specific oligonucleotides corresponded to the new mutations and did not hybridize with PCR products from normal control genomic DNAs. These results indicated that the proband was a compound heterozygote who inherited T1155C mutation in exon 9 from the mother and G1320A mutation in exon 10 from the **father**. Both of them are new missense point mutations and appear to cause significant changes in the structure and function of TNSALP.

AN 1999:330841 BIOSIS

DN PREV199900330841

TI Molecular diagnosis of hypophosphatasia with severe periodontitis.

AU Watanabe, Hisashi [Reprint author]; Goseki-Sone, Masae; Iimura, Tadahiro; Oida, Shinichiro; Orimo, Hideo; Ishikawa, Isao

CS Department of Periodontology, Faculty of Dentistry, Tokyo Medical and Dental University, 5-45, Yushima 1-chome, Bunkyo-ku, Tokyo, 113, Japan

SO Journal of Periodontology, (June, 1999) Vol. 70, No. 6, pp. 688-691.  
print.

CODEN: JOPRAJ. ISSN: 0022-3492.

DT Article

LA English

ED Entered STN: 24 Aug 1999

Last Updated on STN: 24 Aug 1999

L8 ANSWER 13 OF 26 CA COPYRIGHT 2005 ACS on STN DUPLICATE 9

AB Hypophosphatasia (**HOPS**) is an inherited disorder characterized by defects in skeletal **mineralization** due to the deficiency of tissue-nonspecific alkaline phosphatase (TNSALP). To date, various mutations in the TNSALP gene have been identified. Especially, a deletion of T at position 1735 (1735T-del) located in exon 12 has been detected in three genetically unrelated Japanese patients, which seems to be one of the hot spots among the causative mutations in Japanese **HOPS** patients. 1735T-del causes a frame shift downstream from codon 503 (Leu), and consequently the normal termination codon at 508 is eliminated. Since a new in-frame termination codon appears at codon 588 in the mutant DNA, the resultant **protein** is expected to have 80 addnl. amino acids. Expression of the mutant TNSALP gene using COS-1 cells demonstrated that the **protein** translated from the mutant 1735T-del had undetectable ALP activity, and its mol. size was larger than normal, as expected. Interestingly, an immunopptn. study of patients' sera using antibody against TNSALP revealed an abnormal **protein** which corresponded in size to the mutated TNSALP expressed by COS-1 cells, suggesting that the abnormal TNSALP is made by **HOPS** patients. The detection of TNSALP in cells transfected with 1735T-del using an immunofluorescent method exhibited only a faint signal on the cell surface, but an intense intracellular fluorescence after permeabilization.

AN 130:208407 CA

TI Expression of the mutant (1735T-DEL) tissue-nonspecific alkaline phosphatase gene from hypophosphatasia patients

AU Goseki-Sone, Masae; Orimo, Hideo; Iimura, Tadahiro; Miyazaki, Hidetaka;

Oda, Kimimitsu; Shibata, Hisanobu; Yanagishita, Masaki; Takagi, Yuzo;  
Watanabe, Hisashi; Shimada, Takashi; Oida, Shinichiro  
CS Department of Food and Nutrition, Japan Women's University, Tokyo, Japan  
SO Journal of Bone and Mineral Research (1998), 13(12), 1827-1834  
CODEN: JBMREJ; ISSN: 0884-0431  
PB Blackwell Science, Inc.  
DT Journal  
LA English  
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 14 OF 26 CA COPYRIGHT 2005 ACS on STN

AB A review with 72 refs. of applications of fluid mixts. with emphasis on  
SFE and SFC. Fluid mixts., especially in the critical and supercrit. regions, are  
of increasing interest for many fields: in geol. and **mineralogy**  
(e.g. hydrothermal synthesis); as reaction media with continuously  
variable d. and dielec. permittivity, high solvent power, low viscosities  
and high diffusion coeffs.; for some industrial high-pressure processes  
(e.g. low-d. polyethylene); in the oil and natural gas industries (e.g.  
for tertiary oil recovery); for some modern separation techniques such as  
supercrit. fluid extraction (SFE) (e.g. decaffeination of coffee and tea, extraction  
of **hops**, spices, drugs, fragrances, oils, **fats**,  
colors) and supercrit. fluid chromatog. (SFC) (e.g. anal. and preparative  
sepsns., determination of physicochem. properties). Supercrit. fluids are  
promising solvents for the dyeing of fibers, deposition of small-sized  
solid particles (e.g. pharmaceuticals, explosives, coatings) or for chemical  
reactions (e.g. waste destruction in supercrit. water). In the present  
lecture these and other applications of fluid mixts. are reviewed, the  
accent being on SFE and SFC.

AN 122:109563 CA

TI Applications of fluid mixtures and supercritical solvents: a survey

AU Schneider, Gerhard M.

CS Fakultät Chemie, Ruhr-Universität, Bochum, D-44780, Germany

SO NATO ASI Series, Series E: Applied Sciences (1994), 273(Supercritical  
Fluids), 739-57

CODEN: NAESDI; ISSN: 0168-132X

DT Journal; General Review

LA English

L8 ANSWER 15 OF 26 CA COPYRIGHT 2005 ACS on STN

AB The nutrient contents of 4 beers (normal-, diet-, nutrient- and malt beer  
with sugar) were tabulated for water, EtOH, **carbohydrates**,  
N-compds., fusel oil, volatile organic acids, nonvolatile organic acids, esters,  
aldehydes, glycerol, CO<sub>2</sub>, **hops**, tannins, pigments, and  
**minerals**, and minor fermentation products and aroma compds.

AN 78:41490 CA

TI Components and physiological significance of normal, diet, and nutrient  
beers

AU Hagen, W.; Drawert, F.; Postel, W.

CS Inst. Chem.-Tech. Anal. Chem. Lebensmitteltechnol., Tech. Univ. Muenchen,  
Freising-Weihenstephan, Fed. Rep. Ger.

SO Chemie, Mikrobiologie, Technologie der Lebensmittel (1972), 1, 112-20

CODEN: CMTLBX; ISSN: 0366-7154

DT Journal

LA German

L8 ANSWER 16 OF 26 CA COPYRIGHT 2005 ACS on STN

AB A technological review. This beer, the traditional beer of the Bantu  
since prehistoric times, is made from malted sorghum and a starchy adjunct  
(millet, corn, or grain sorghum) without **hops** or pasteurization.  
It is consumed within 8-24 hrs. while it is still actively fermenting.  
Nutrient value is provided by unconverted starch and retained yeast.  
Substituting highly refined ingredients for unrefined **vitamin**  
-rich sorghum has decreased the **vitamin** content in recent years.  
A lactic acid fermentation preserves the beer, softens cereal  
**proteins**, and provides a refreshing taste. The fermentation is  
done by a top-fermenting yeast. Typical beer anal. is: alc. (by weight)  
3.2%, pH 3.5, lactic acid 213 mg. %, volatile acids (HOAc) 0.016 g./100

ml., total solids 4.9%, insol. solids 2.3%, N 0.084%, **vitamins**, and unusually high fusel oil content. 42 references.

AN 69:50939 CA  
TI Kaffir beer brewing. Ancient art and modern industry  
AU Novellie, L.  
CS Nat. Chem. Res. Lab., Pretoria, S. Afr.  
SO Wallerstein Laboratories Communications (1968), 31(104), 17-29  
CODEN: WLCOAX; ISSN: 0043-0137  
DT Journal; General Review  
LA English

L8 ANSWER 17 OF 26 CA COPYRIGHT 2005 ACS on STN  
AB Trace elements are essential to plants and are used in agriculture along with **mineral** fertilizers containing N, P, and K. Extensive investigations found Ukrainian S.S.R. soils deficient in Mn. These soils were improved by addition of Mn in a fertilizer consisting of Mn slag and superphosphate. Preliminary test on the effect of Mn on plants was done with corn (*Zea mays*), where to small amts. of soil were added fertilizer with and without Mn, and corn was planted. Subsequent tests were made in fields of corn, wheat, sugar beets, tomatoes, cereal, oil-bearing crops, and **hops**. Summarized results indicated that trace-element Mn favored development of soil microorganisms, increased productivity of various crops, raising sugar content in beets, **protein** in wheat, starch in corn and potatoes, sugar and **vitamins** in tomatoes, and bitter principles in **hops**.

AN 55:61312 CA  
OREF 55:11719h-i,11720a  
TI Phosphorus-manganese fertilizer  
AU Vlasjuk, P. A.; Lendenskaya, L. D.; Kibalenko, A. P.  
SO Nauch. Trudy, Ukr. Nauch.-Issledovatel. Inst. Fiziol. Rastenii Ukr. Akad. Sel'skokhoz. Nauk (1959), 12, 15-32  
DT Journal  
LA Unavailable

L8 ANSWER 18 OF 26 CA COPYRIGHT 2005 ACS on STN  
AB The basic diet of natives from certain regions of Peru consists chiefly of 2 products: a saltwater fish (Guitarra) (I) and an alc. beverage ("corn chicha") (II). II is made by cooking for 48 hrs. a mash of sprouted corn, adding sugar-cane molasses, and fermenting the resulting **hops** in clay containers which are contaminated with yeasts from previous use. Fermentation is allowed to proceed anywhere from 24 hrs. to 15 days depending on the desired alc. concentration. The following results are given for II after 15 days' fermentation: d. 1.0097, EtOH (by volume) 7.0, (by weight) 6.7, H<sub>2</sub>O 93.72, **fat** 0.383, **proteins** 0.1465, total sugars (as glucose) 9.494, reducing sugars (as glucose) 3.225, **vitamin C** 9.48 International Units (I.U.), total ash 0.9816, Ca 0.0229, P 0.05655, chlorides (as NaCl) 0.152; acidity (as H<sub>2</sub>SO<sub>4</sub>): total 5.488, volatile 0.784, and fixed 4.704%; cal. 78/100 g. The following results are given for I meat: H<sub>2</sub>O 27.87, **fat** 0.92, total **protein** 64.90, digestible **protein** 36.49, tyrosine 1.194, tryptophan 0.75, glycogen 0.18, total ash 4.474, acid-soluble ash 1.39, chlorides (as NaCl) 2.9697, P 0.5974, I 0.19145, S 0.7926, Fe 0.006374, Ca 0.3679%; **vitamin A** 2590 and **vitamin D** 259 I.U./g. of **fat**; cal. 275/100 g.; nutritive value (dry-matter basis) 0.0376.

AN 48:19666 CA  
OREF 48:3579h-i,3580a-b  
TI Nutritional and chemical study of *Rhinobatos planiceps* (Guitarra) and of "corn chicha"  
AU Vassallo, Alfonso Vasquez  
CS Univ. nacl. mayor San Marcos, Lima, Peru  
SO Anales fac. farm. y bioquim., Univ. nacl. mayor San Marcos (Lima, Peru) (1951), 2, 207-18  
DT Journal  
LA Unavailable

L8 ANSWER 19 OF 26 CA COPYRIGHT 2005 ACS on STN  
AB Foods may be stabilized against decomposition, particularly oxidative changes, by the addition of **hops**, either in powdered form or in H<sub>2</sub>O or C<sub>2</sub>H<sub>5</sub>OH

solution A food spread is prepared by dispersing about 2 parts of sucrose or other sugar in about 1 part of glyceride oil medium, such as a high-melting hydrogenated coconut or cottonseed oil and then dispersing in this medium quantities of **vitamin** concentrates or the pure **vitamins**. **Hops** in the proportion of from 1 part in 10,000 to 1 part in 100,000 are then incorporated into the medium as a factorial stabilizer. The **hops** may be in finely divided form or in the form of a concentrated H<sub>2</sub>O- and C<sub>2</sub>H<sub>5</sub>OH-soluble extract, preferably prepared from **hops** of the species *Humulus americanus* and(or) *Humulus lupulus*. Refined sugar may be used but a sugar prepared by subjecting a disaccharide to pyrolysis at a temperature of from 250°F. to about 400°F. for from 1 to 5 min. is preferred. The spread may be used on crackers, wafers, cookies, bread, or other products. Oils, **fats**, and food compns. containing them may also be stabilized against oxidative deterioration by adding approx. 1% or less of **hops**. Products containing **hops** may be exposed to the atmospheric for relatively long periods of time without appreciable harmful effect.

AN 39:30652 CA  
OREF 39:4998a-d  
TI Protection of food products from oxidative deterioration  
IN Lindow, Carl W.; Thompson, Joseph J.  
PA Kellogg Co.  
DT Patent  
LA Unavailable  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2382242		19450814	US	

L8 ANSWER 20 OF 26 CA COPYRIGHT 2005 ACS on STN  
AB E. emphasizes the importance of measuring the H-ion concentration which gives much more accurate information in respect to acidity than titration with indicators. A U-type Pt H electrode is recommended. The titration curves of wort and beer indicate clearly the predominance of a phosphate buffer system. The neutral point corresponding to the dissociation constant is about pH 6.7. The inadequacy of indicator titration is discussed. The H-ion concentration of buffer solns. and of worts and beers is raised by sugars and nonelectrolytes; a further rise during fermentation is caused by acids formed; alc. has the reverse effect. The importance and role of the dielec. constant are set forth. Other surface phenomena which play a part in the brewing process are discussed. The function of **hops** is mainly in precipitating **proteins**; pH and sufficient buffer are important. Infections like *Sarcina* might be controlled by high H-ion concentration. The food value of beer is emphasized particularly in respect to its **mineral** constituents. The curative properties of yeast are mentioned; its bactericidal influence in infectious diseases and in healing wounds and inflammation by reenforcing local acidosis is explained. The effects of Fe, Zn, Ni and Al are discussed.

AN 27:65130 CA  
OREF 27:5887i,5888a-b  
TI Hydrogen-ion concentration and dielectric constant in beer and in the course of its production  
AU Emslander, F.  
SO Wochenschrift fuer Brauerei (1933), 50, 89-95,102-4,108-12,119-20  
CODEN: WSBRAI; ISSN: 0372-7521  
DT Journal  
LA Unavailable

L8 ANSWER 21 OF 26 CA COPYRIGHT 2005 ACS on STN  
AB cf. C. A. 21, 1685. Dried **hops** possess a high absorptive capacity and may be used as a "filler" to absorb such by-products as molasses and treacle. The material possesses a high crude **protein** value, an ether extract very high for a fibrous food, an amount of crude fiber the same as in good meadow hay, and a high % of **mineral** matter. The digestibility was determined by feeding with hay chaff and linseed cake meal to 3 sheep. The spent **hops** were not readily eaten and could be included in a ration only to the extent of 1/7 of the dry weight of the total ration. Its digestibility is low; only 20% of the crude

**protein** and the N-free extractives, 50%, of the ether extract, 5% of the crude fiber and 20% of the total organic matter are digestible. The production starch equivalent was 24.5. Spent **hops** included in the ration had the property of depressing the digestibility of the **mineral** constituents of the basal ration. The ether extract was examined in detail and was found to contain residual hop oil. The total extract was of moderate volatile **fatty** acid content, high saponification value compared with vegetable **fat**, low I value, and contd. an appreciable amount of unsaponifiable matter. The oil broke up readily under the effects of heat and samples obtained had variable acid values.

AN 21:25373 CA

OREF 21:3094a-c

TI The nutritive value of dried spent hops

AU Davirs, W. L.; Sullivan, R. S.

SO Journal of the Agricultural Society of the University College of Wales (1927), 17, 380-7

CODEN: JASWAJ; ISSN: 0368-1335

DT Journal

LA Unavailable

L8 ANSWER 22 OF 26 CA COPYRIGHT 2005 ACS on STN

AB Spent **hops** dried to 6% H<sub>2</sub>O contain ether-extract 8. crude

**protein** 23-24, crude fiber 23-25, soluble **carbohydrates**

40-42, and **mineral** matter 6-7%. In feeding expts. with sheep

the % digestibility of the constituents of this material was: crude

**protein** 20, ether extract 54, soluble **carbohydrates** 21, and

crude fiber 20. The material has a costive effect on the animals and due to its bitter taste they could not be made to eat more than 100 g. per day.

AN 21:13702 CA

OREF 21:1685a

TI Spent hops as a feeding material

AU Davies, W. L.

SO Fertiliser, Feeding Stuffs and Farm Supplies J. (1926), 11, 694

DT Journal

LA Unavailable

L8 ANSWER 23 OF 26 CA COPYRIGHT 2005 ACS on STN

AB If yeast is not to be used at once it is necessary to reduce its water content to 10 to 20%. The pressed yeast (containing about 70% of water) is mixed with water to a thin paste, in which is made to rotate a hollow drum with internal steam heating. The layer of yeast withdrawn at each revolution is dried on the surface and removed by means of a scraper, and is finally ground to a fine powder. In the case of beer yeast a preliminary treatment with dilute alkali is necessary to remove the bitterness due to the **hops**. Dried yeast prepared in this way contains about 53% of albumin, 3% of **fat** and 27% of **carbohydrates**, and has a nutrient value of about 3500 cal. per kg. For the preparation of a nutrient meal fermenting yeast is treated with 2% of an organic solvent (such as ether, benzene, or glycerol) or of salts (Na chloride or carbonate) and, when liquefied, it is heated to 70-80°, mixed with starch or flour and, after hydrolysis of the starch, the mixture is converted into a powder. An aromatic yeast condiment is made by roasting pressed yeast at about 60° until the water is reduced to about 30%, and then closing the air-regulators of the apparatus and completing the roasting at 100°. A fluid condiment is obtained by mixing pressed yeast with about 10% of NaCl and leaving the mass for some hours in a cool cellar and then for 3 hrs. at 50°, after which it is boiled with water and pressed, and the liquid concentrated and filtered. Lindner's process of obtaining **fat** by cultivating *Endomyces vernalis* on a nutrient medium of dilute molasses and **mineral** salts yielded a yellow oil-cake containing about 18% of **fat**, 31% of **proteins**, and 43% of **carbohydrates**. The oil was suitable for food and yielded a hard soap. Yeast preps. are extensively used for the medicinal treatment of digestive troubles, and in diseases of the skin, eyes, etc. As the **vitamines** are not destroyed by a short heating at 100°, the yeast, after being killed, is used as a remedy for beriberi, rickets, etc. Plastic masses are made by treating

waste yeast with CH<sub>2</sub>O, and drying and grinding the mixture with or without the addition of tar, tar oils, S, pigments, etc. It is then compressed in molds at 90° or above, and under a pressure of at least 200 atms. The product which is termed "Ernolith" can be used as a substitute for bakelite, celluloid, etc.

AN 13:14873 CA

OREF 13:2957c-h

TI Utilization of yeast

AU Schweizer, K.

SO Journal of the Society of Chemical Industry, London (1919), 38, 433-4A

CODEN: JSCIAN; ISSN: 0368-4075

DT Journal

LA Unavailable

L8 ANSWER 24 OF 26 CA COPYRIGHT 2005 ACS on STN

AB If yeast is not to be used at once it is necessary to reduce its water content to 10 to 20%. The pressed yeast (containing about 70% of water) is mixed with water to a thin paste, in which is made to rotate a hollow drum with internal steam heating. The layer of yeast withdrawn at each revolution is dried on the surface and removed by means of a scraper, and is finally ground to a fine powder. In the case of beer yeast a preliminary treatment with dilute alkali is necessary to remove the bitterness due to the **hops**. Dried yeast prepared in this way contains about 53% of albumin, 3% of **fat** and 27% of **carbohydrates**, and has a nutrient value of about 3500 cal. per kg. For the preparation of a nutrient meal fermenting yeast is treated with 2% of an organic solvent (such as ether, benzene, or glycerol) or of salts (Na chloride or carbonate) and, when liquefied, it is heated to 70-80°, mixed with starch or flour and, after hydrolysis of the starch, the mixture is converted into a powder. An aromatic yeast condiment is made by roasting pressed yeast at about 60° until the water is reduced to about 30%, and then closing the air-regulators of the apparatus and completing the roasting at 100°. A fluid condiment is obtained by mixing pressed yeast with about 10% of NaCl and leaving the mass for some hours in a cool cellar and then for 3 hrs. at 50°, after which it is boiled with water and pressed, and the liquid concentrated and filtered. Lindner's process of obtaining **fat** by cultivating *Endomyces vernalis* on a nutrient medium of dilute molasses and **mineral** salts yielded a yellow oil-cake containing about 18% of **fat**, 31% of **proteins**, and 43% of **carbohydrates**. The oil was suitable for food and yielded a hard soap. Yeast preps. are extensively used for the medicinal treatment of digestive troubles, and in diseases of the skin, eyes, etc. As the **vitamines** are not destroyed by a short heating at 100°, the yeast, after being killed, is used as a remedy for beriberi, rickets, etc. Plastic masses are made by treating waste yeast with CH<sub>2</sub>O, and drying and grinding the mixture with or without the addition of tar, tar oils, S, pigments, etc. It is then compressed in molds at 90° or above, and under a pressure of at least 200 atms. The product which is termed "Ernolith" can be used as a substitute for bakelite, celluloid, etc.

AN 13:14872 CA

OREF 13:2957c-h

TI Utilization of yeast

AU Schweizer, K.

SO Schweizerische Chemiker-Zeitung (1919), 1, 33-6, 69-72

CODEN: SCHZAI; ISSN: 0370-9051

DT Journal

LA Unavailable

L8 ANSWER 25 OF 26 CA COPYRIGHT 2005 ACS on STN

AB The congress called by the "White Cross Society" met in Geneva, Sept. 8-12, 1908. The following important resolutions defining foods and beverages were adopted. Wine is the product resulting from the complete or incomplete alcoholic fermentation of fresh grapes or fresh grape juice. The name of a country or locality is only to be applied to such wines grown in said country or locality. The name "natural sparkling wine" (vin mousseux naturel) is restricted to those products whose effervescence results from alcoholic fermentation. This applies to white and red wines

without regard to origin. If the effervescence is caused by the addition of CO<sub>2</sub>-either entirely or in part-the product is to be called "vin gaz.acte.eifi.acte.e" or "vin mousseux gaz.acte.eifi.acte.e." Alcohol is the rectified distillation product of any fermented liquid. Cognac or "eau de vie des Charentes" is the distillation product of natural wines harvested and distilled within the administrative limits of the Charente and the Charente inf.acte.erieure according to the process of the Charente. Similar resolutions were adopted for armagnac, kirsch, fruit brandies and rum. "Rhum de fantaisie" is rum to which alcohol has been added. Vinegar: Wine vinegar is the product of the acetous fermentation of wine exclusively. Vinegar must be sold with the declaration of the material from which it is made. It should contain not less than 6% acetic acid. Cider and Pear Juice: Cider is the product of fresh apple juice, extracted with or without addition of water. Pure cider juice (cidre pur jus) is the fermentation product of fresh apple juice extracted without addition of water. Similar definitions were adopted for pear juice and pure pear juice (poir.acte.e pur jus). Sparkling cider and pear juices are cider and pear juices fermented in bottles. Cider and pear juice "gazeux" are obtained through introduction of CO<sub>2</sub> into cider and pear juice. Cocoa and Chocolate: Cocoa mass is the product obtained by crushing the shelled, peeled and roasted cocoa beans previously freed as much as possible from germs and sprouts. Addition of cocoa butter and harmless aromatics is allowed. Powdered cocoa is pulverized cocoa mass. Soluble cocoa is to be determined as such. Cocoa which has undergone a chemical treatment cannot qualify as pure cocoa. Chocolate mass or powder is cocoa mass mixed with sugar. It should contain not less than 32% cocoa mass. Milk chocolate should not contain any preservative substances. Coating is a mixture of cocoa mass and sugar. Any addition must be declared. Only chocolates or candies coated with pure coating should be called "chocolate bonbons." Cocoa butter is the **fat** extracted from ordinary or soluble cocoa. Preserves (confiture pur) are the products resulting from boiling fruits or fruit juices with cane or beet sugar. Sugars: Refined sugar, commercially pure, should contain not less than 99.5% sucrose. White crystal sugar should contain not less than 98.5% sucrose. Invert sugar is the transformation product of cane or beet sugar into dextrose and levulose. The name rock candy is to be applied only to sugar obtained through slow crystallization from weak solutions. Coffee and Tea: Coffee (beverage) is an infusion prepared with boiling water and ground roasted coffee beans. Flour and Bread: After having adopted resolutions in regard to spices, mustard, pepper and cinnamon, the following standards were adopted for farina: Farina without further declaration is the product obtained from the grinding of cleansed wheat grains. It may contain a very small quantity of flour from other cereals growing together with wheat and small quantity of very fine sand, which may have escaped the cleansing process (15-300 g. per 50 kg.). Groats (grits): The same specifications apply for groats, where the only difference lies in its different size of grains. Groats, without further declaration, denote wheat groats only. Bread. The word bread is reserved for the product made from wheat, leaven or alcoholic beer- or grain-yeast, water and salt. Bread made from a mixture of wheat and rye flour is to be called wheat bread. Beer is the beverage obtained through alcoholic fermentation of a mash consisting of **hops**, malt-barley, yeast and water. Cordials (liqueurs) are alcoholic beverages (eaux-de-vie) flavored by maceration with vegetable substances, or by distillation from such substances or by addition of an aqueous or alcoholic distillation product from such aromatics or by combining these methods for flavoring. They may be sweetened by means of glucose, grape sugar or honey and may be colored with harmless substances. Milk is the integral product product obtained by complete and uninterrupted milking of a healthy, well nourished and not overworked female, suitably collected and not containing colostrum. Milk ordinarily applies to cow's milk only. Butter is a mixture of **fats** obtained exclusively by churning milk-cream or milk and cream. The cream is obtained biologically with or without acidification of the milk. Cheese, pure, is the ripened product of the coagulum made from pure milk by means of rennet or an acid; or from milk-cream, or from milk entirely or partially freed from cream, without addition of any substance other than normally used in the manufacture of cheese such as ferments, salts, spices, coloring matter for cheese etc.



Oils and Edible **Fats**: The (physical) difference between the oils and edible **fats** consists in the fact that the former are liquid and the latter solid at a temperature of 15°. Olive oil is the oil extracted from olive fruits. Analogous specifications are adopted for other oils. Margarine: This name is to be applied to all edible **fats** resembling butter in color, consistency, odor and taste if they are not entirely derived from milk. Preserved foods are products, the principal properties of which are preserved by means of a suitable treatment or through influence of certain substances for a greater or less time depending on the method used, the changes which would make them unfit for consumption being thus prevented. The principal processes for preserving are: salting, pickling, drying, refrigerating, heating, pasteurizing and sterilizing in closed vessels (process Appert). Meat, Meat Products, Salted Meats: Adopted definitions not given. Lard is the product obtained by rendering the **fatty** parts of pork without the addition of any substance. The moisture content should not exceed 1%. Pastries and Confectionery: Goods produced by these industries (patisserie, biscuiterie, confiserie) should contain edible substances of good quality only. Sparkling lemonades are carbonated waters to which sugars and aromatics are added and which may be acidulated or contain substances frothing by agitation. Harmless substances only should be used. For artificial fruit essences the declaration of their content of artificial chemical compounds is proposed. **Mineral** water is natural, uncontaminated water which is used for its therapeutic or special hygienic properties. The congress recommended their official recognition so as to distinguish them from artificial **mineral** waters.

AN 3:2276 CA

OREF 3:454d-i,455a-i,456a

TI First Congress for the Prevention of Adulteration of Food and Pharmaceutical Products

AU Marre, Francis

SO Rev. gen. chim. (1909), 11, 379

DT Journal

LA Unavailable

L8 ANSWER 26 OF 26 CA COPYRIGHT 2005 ACS on STN

AB On February 6th the tentative standards for malt liquors proposed by the Joint Committee on Food Standards, representing the Association of Official Agricultural Chemists and the Association of State and National Food and Dairy Departments, were discussed and a hearing was had at which a committee appointed by the Board of Trustees of the United States Brewers' Association presented its views on the proposed standards. This committee acting for the United States Brewers' Association, which represented about 90% of the output of American breweries, had solicited the co-operation of five Scientific Brewers' Stations, through their directors. Dr. R. Wahl, Chicago, was chosen spokesman and his argument being endorsed by the Committee of Brewers and Scientists as a unit, it can be taken to represent the position the brewing industry, both technically and commercially, holds on the subject. Dr. Wahl's criticism and synopsis of argument follow: Tentative Standards Published 1906. (1) Malt liquor is a beverage made by the alcoholic fermentation of an infusion, in potable water, of barley-malt and **hops**, with or without unmalted cereals. (2) Beer is a malt liquor produced by bottom fermentation and contains, in one hundred (100) cubic centimeters, at 20 degrees C., not less than five (5) grams of extractive matter and sixteen one hundredths (0.16) gram of ash, chiefly potassium phosphate, and not less than two and twenty-five hundredths (2.25) grams of alcohol. (3) Lager beer, stored beer, is beer which has been stored in casks for a period of at least three months, and contains, in one hundred (100) cubic centimeters, at 20 degrees C., not less than five (5) grams of extractive matters and sixteen one-hundredths (0.16) gram of ash, chiefly potassium phosphate, and not less than two and fifty one-hundredths (2.50) grams of alcohol. (4) Malt beer is beer made of an infusion in potable water, of barley malt and **hops**, and contains, in one hundred (100) cubic centimeters, at 20 degrees C., not less than five (5) grams of extractive matter, not less than two tenths (0.2) gram of ash, chiefly potassium phosphate, nor less than two and twenty-five hundredths (2.25) grams of alcohol, nor less than four-tenths (0.4) gram of crude **protein**



(nitrogen + 6.25). (5) Ale is a malt liquor produced by top fermentation and contains in one hundred (100) cubic centimeters, at 20 degrees C., not less than two and seventy-five hundredths (2.75) grams of alcohol nor less than five (5) grams of extract. (6) Porter and stout are varieties of ale colored by the addition of highly roasted malt to the infusion. Synopsis of Dr. Wahl's Argument. The points which the speaker declared of most importance to have clearly brought out were characterized by him as follows: (1) The tentative standards as submitted are impossible, because unreasonable, since many recognized ales and beers do not conform to them. (2) There should not be created a separate class of Malt Beers, since our American beers from malt and cereal products conform better to the recognized standards of European lager beers and ales than American all-malt beers, and there is therefore no justification of discrimination in favor of all-malt beer which would be implied in the mere designation of a special class. The American malt and cereal beers will be found to conform to any standard you may adopt as readily as will the European all-malt beers. (3) Three months' storage is excessive, and few European beers conform to this requirement. (4) The reason why American beer conforms more readily than European standard beers to the requirements as to content of albumen and phosphates, each of which ingredients is properly considered by your commission as an index of quality, is that American barleys of the six-row Manchuria type, from which the bulk of American beers are produced, are richer in albumen and phosphates than European barleys of the two-rowed Chevalier or Hanna and other types generally employed there. The American six-rowed barleys must therefore be considered superior to the European two-rowed barley. (5) Bavarian beers may be classed with American all-malt beer as being too rich in point of albumen and phosphates to suit the taste of the public, where beer is drunk not so much on account of its nourishing qualities but for its appetizing, stimulating and thirst-quenching effect. Therefore the lighter Bohemian beer, with less albumen and phosphates, has gained in public favor and has displaced the Bavarian beer largely the world over-even in Bavaria-and our American beers, in order to conform to this Bohemian type, must be brewed in part from materials yielding little or no albumen or phosphates, like unmalted cereal products. (6) The American six-rowed barley is superior to the European two-rowed in the production of bottle beers, which must meet the requirements of stability, that is, freedom from haziness when chilled or from sedimentation when kept in the bottle for a long time. The American barley malt has greater peptonizing strength, and yields beers with less of the objectionable types of albumins which are the cause of haziness and sedimentation in the bottle. Therefore the two-rowed barley can not be so successfully employed in the production of bottle beer as can six-rowed. A Special brief will be submitted on this subject. (7) The requirement of 5 grams of extract and 0.16 gram of ash for 100 cc. of beer, and 0.4% of albumen and 0.2 of ash for 100 cc. of malt beers should be changed to a definite lower minimum of albumen and ash, as elaborately explained in the argument, and the amounts of albumen and ash in the beer should bear a certain relation to the amount of extract in original wort. (8) The standard ingredients should not be given in terms of grams per 100 cc. at 20° C., but in terms of grams per 100 grams at 15° C., as emphasized especially in Dr. Robitschek's paper, hereby also submitted. (9) A special brief is submitted on the two following questions: "Is there known any practical and accurate method for identifying the so-called glucose beers, and beers made from, or part from, unmalted cereals?" and "Is the estimation of phosphoric acid, sulphates and nitrogen content sufficient to do this? And if not, What other determination may assist us?" These questions are answered negatively, that is, for the amounts of cereals up to 40% and sugar up to 25%. (10) Instead of expressing the mineral ingredients in terms of ash they should be expressed in terms of phosphoric acid. (11) The employment of wholesome sugar should not be discriminated against, either for beer or alc. This will form the subject of a special brief by Dr. Wyatt for ale and Dr. Wahl for beer.

AN 2:6867 CA

OREF 2:1590h-i,1591a-i,1592a-d

TI Standards for Malt Liquors

AU Wahl, R.

SO American Brewer's Review (1908), 22, 124

CODEN: ABRVAL; ISSN: 0099-7315

DT Journal

LA Unavailable

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<u>L14</u>	113 same 15	75	<u>L14</u>
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<u>L12</u>	protein or fat or carbohydrate or glucosamine or chondroitin sulfate or amino sugar	655088	<u>L12</u>
<u>L11</u>	110 not 17	2	<u>L11</u>
<u>L10</u>	19 same 15	65	<u>L10</u>
<u>L9</u>	18 same 12	536	<u>L9</u>
<u>L8</u>	humulus lupulus or hops	39816	<u>L8</u>
<u>L7</u>	14 same 15	63	<u>L7</u>
<u>L6</u>	14 and 15	247	<u>L6</u>
<u>L5</u>	capsule or tablet or inject\$6 or spray\$6 or lotion	2221516	<u>L5</u>
<u>L4</u>	11 same 12	524	<u>L4</u>
<u>L3</u>	11 and 12	3861	<u>L3</u>
<u>L2</u>	antioxidant or vitamin or mineral	643500	<u>L2</u>
<u>L1</u>	hops	39499	<u>L1</u>